SOME PHILOSOPHIC CONCEPTS AND EXPERIENCE WITH RESPECT TO DISEASE AND DISABILITY*

A Bernard S. Oppenheimer Lecture

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WHILE rehabilitation is generally thought of as a process of restoring or retraining those with physical handicaps so that they may be gainfully employed, modern industry must take a more humanitarian and economic point of view. It is as important to prevent injuries and lost time from illness as it is to provide mechanical maintenance for operating equipment. The word rehabilitation itself connotes failure at some point, at least in many instances. Thus the Du Pont company provides a rather extensive program of health maintenance, disease control, and accident prevention for its 100,000 employees. Our prime effort there is geared to prevention rather than to rectification. The reason for the interest in accident prevention will be clear from the fact that accidents constitute the leading cause of death in the United States in persons aged 1 to 34; they comprise the second commonest cause in the age groups of 35 to 44 years and are fourth in the 45- to 64-age bracket.

The result of our interest and preventive effort is apparent from the fact that the Du Pont injury frequency rate for 1962 (number of disabling injuries per 1 million man-hours of work) was 0.31. This result was 10 times better than that for the chemical industry in general, and 18 times better than the average for all industry in the United States.

That modern industry is not the most hazardous place to spend one's time, nor an area of contact for serious disorders, is attested by Table I. This table compares the annual number of deaths per 100,000 personnel in the company with the rate for the United States. (Due consideration, however, must be given to the fact that ours is a selected group and thus not one directly comparable to a random population.)

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TABLE I—ANNUAL NUMBER OF DEATHS PER 100,000 PERSONS

	U.S. rate	*Du Pont rate**
Heart disease	179.9	137.0
Cancer	83.3	71.4
Accidents	66.0	37.7†
Vascular lesions (hemorrhage and thrombosis)	28.8	26.4
Suicide	18.0	10.8
Flu and pneumonia	8.8	4.0
Ulcer (stomach and duodenum)	5.9	3.7
Cirrhosis of liver	12.2	3.0
Homicide	7.1	2.8
Nephritis	7.5	2.5

*Also includes pensioners.
†Includes off-the-job accidents.

This comparison justifies those who believe health examinations in industry are valuable.

Medical textbooks rightfully suggest that exposure to industrial chemicals should be considered in the etiology of such a disease as aplastic anemia but, at the present time, the odds are about 12 to 1 in favor of the contention that therapeutic agents are responsible in a random case.[1]

Chronic disease takes its toll in lost time, decreased efficiency, job shifting, retraining, and the need and expense of rehabilitation. Its importance in any consideration of rehabilitation has perhaps not received the attention it deserves, for it has been overshadowed by traumatic disorders. We are attempting to study the early recognition of chronic disease, to elucidate the factors and characteristics that precede its appearance even before patients affected with it seek medical care, and to understand the incipiency of the disease a little better so as to contribute to the knowledge already obtained by the internist, the epidemiologist, and the researcher.

A chronic disease I shall mention briefly is alcoholism. The reason for industry's interest in this disorder and the need of rehabilitation for alcoholic employees will be clear when it is realized that in the United States alcoholic employees lose more than 36 million working days a year, with an annual wage loss in excess of 400 million dollars; that one of every 13 men 20 years of age or older who drinks has a drinking

problem; that the alcoholic employee loses 22 working days a year more than the average employee; he loses two more days a year for every illness he has than do other employees; he has twice as many accidents; and his life expectancy is 12 years less than that of the non-alcoholic employee. Moreover, the so-called "hidden" problems of the alcoholic employee are of considerable magnitude. We have had more than 1300 known alcoholic employees. Our salvage or rehabilitation rate has been about 65 per cent.

Insofar as mental stress is concerned, we are convinced, and certainly many competent authorities agree with us, that these stresses all too frequently are based on a neurotic diathesis, which in turn stems from earlier conditioning to life's circumstances and environmental exposures which have exerted their effects long before the individual's adult employment. We do not, in the main, feel that the work situation should be held responsible for or contributory to aberrant patterns of behavior, thought, and conditioning created in the individual's psyche before he was old enough to be employed.

It is always tempting for the attending physician to focus upon what the patient feels is a stressful work situation when a more objective professional reasoning will allow him to see past the smoke screen of job stress into the more realistic factors of basically faulty attitudes and reactions (usually subconsciously activated and controlled) that the individual brings to his work.

We are all too familiar with the physician who requests patients to take off two to six weeks from work for these reasons when we know very well that an aide, receptionist, or nurse on his own payroll will not have similar symptoms dignified by being granted even an afternoon off. In any case this type of therapy is therapy by separation, and it is obviously superficial in type, as it makes no attempt to seek more fundamental causes.

Sometimes we even discover that so-called mental stress as well as associated physical stress may reflect upon an employee's attitude toward or ability to handle a job; such stresses may camouflage a poor over-all performance. Let us not ignore the fact that many of our employees, and not infrequently our pensioners (retired for either medical and age reasons), do more work at home than is or was ever required by their jobs.

The amount of concerted and considered effort the legal profes-

sion has given to the problem of rehabilitation may be gleaned from a statement made by Howard Hassard,[2] attorney and executive director, California Medical Society: ". . . in a gross fashion, the legal aspects of rehabilitation may be approached by noting the fact that one of our leading legal encyclopedias, a work of over 100 volumes and 150,000 pages, devotes approximately 550 pages to the legal ramifications of the word 'damages' and less than one half of one page to the legal aspects of 'rehabilitation.' "

I quote further from a communication received from W. B. De Riener of our legal department:

> In any discussion of rehabilitation of disabled workers and their further employment, there is a common-sense dividing line between those injuries which involve the loss of a member of the body or a sensory perception, as distinct from those degenerative conditions generally falling into heart and back disabilities. The difficulty in assigning the degree of disability based on subjective complaints in these areas is an additional complication. In a state such as New Jersey, which has virtually abandoned the requirement of an "accident" to initiate or aggravate a heart condition, an employer who embarks on a program of employing or continuing the employment of cardiac cases is courting disaster. As a practical matter, due to the protective attitude of most states, there is no recourse to the Second Injury Fund, and the employer becomes responsible for deterioration in the employee's health even though the work being performed may be generally regarded as therapeutic, and even though the ultimate breakdown takes place away from the job.
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> Back cases fall into the same category of employment risks, where the degree of disability apparent at any particular date cannot be assigned from one employer to another, or to an aggravation attributable to the job, or to the normal course of disease. In this category of cases it is unrealistic for the State to expand, administratively or judicially, the extent of an employer's liability for aggravation, and, at the same time, urge him to employ or re-employ such prospectively expensive risks.
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> A different situation exists with respect to the amputee, or the worker who has received an award for a scheduled injury, since he has historically been continued in employment with Du Pont as long as work could be made available to him and a pension ulti-

mately provided. In our case the pre-employment physical examination is not solely used for determining Workmen's Compensation risks, but under our non-occupational Disability Wage Plan we must not expose the employing facilities to those costs which will arise if substandard medically competent employees are hired. The environmental conditions of a chemical plant are not conducive to assisting either the physical or mental problems of a handicapped worker, where subjective complaints have a high probability of being translated at a compensation hearing into an award of major proportions.

Our safety program is itself a rehabilitation effort in its emphasis upon immediate first aid, reducing lost time due to injuries, and in assigning employees to restricted or guided work while healing proceeds. However, the cases involving hearts and backs do not seem to fall readily into this policy, and it is increasingly unwise to include them at production facilities.

Most industrial jobs today require but moderate to minimal effort. In many instances, the effort of getting to and from work requires more stress and strain than do the actual work conditions. These remarks are particularly apropos as the mechanization of industry increases. There are exceptions, of course, but the family physician should be urged to inquire more frequently into the actual requirements of work, rather than to assume that these requirements cause mental stress or physical activity of an undue nature.

Now let us look at accidents from a psychiatric aspect. Man is predominantly guided by motives and feelings about which he is most often unaware. People can become involved in accidents by the same basic mechanisms that involve them in other difficulties. In a study of accidents (occupational and nonoccupational) made in one of our plants, one of our psychiatrists[3] found that at least 45 per cent of the accidents were believed to be caused or precipitated by emotional problems, most of them with factors entirely unrelated to the job situation and usually of rather recent origin. It was the investigator's belief that the percentage would possibly have been higher but for the usual "covering over."

The injury group had made only one half the number of dispensary visits prior to the accident as had the noninjured group. The

investigator raises the question of whether the injury group may have been solving its problems by having accidents, whereas the noninjury group resorted more to psychogenic illness and consequent plant dispensary visitations as a means of release or relief from emotional problems or difficulties.

Guilt is an important component of all neuroses, and it seems established in psychiatry that guilt-ridden patients seek punishment. The accident process is itself a self-destructive mechanism and, in addition to the lack of control exhibited in an emotional state, we have another more fundamental and basic psychodynamic concept as a potential explanation for the accident phenomenon.

Upon returning to work, the question is: Should one return to the same job, or to a special one? Forty per cent of our 1,356 employees who had had a myocardial infarction during a 6-year period, had a job change or a job modification of some degree. Here the attitude of the patient is of prime importance, and this attitude is often engendered by the attitude of the attending physician. If the physician is optimistic and encouraging, this outlook is usually reflected in that of the patient.

Some of our leading cardiologists have increasingly recommended intelligent and graded exercises as soon as the acute onset is over. In many instances, the energy requirements of these exercises are more strenuous than those required for performance of the job.

Now a word about rehabilitation. In our company we are accustomed to think of rehabilitation for chronic disease as well as for injuries, for we feel that the proper placement of each employee will enable him to use his capabilities without penalty for disabilities.

Webster defines *to rehabilitate* as follows: "to restore to a former capacity." This is obviously not possible in each instance. A more practical and useful definition of rehabilitation is that of the National Council on Rehabilitation: ". . . the restoration of the handicapped to the fullest physical, mental, social, vocational, and economic usefulness of which they are capable." The usual concept in our company of a physically handicapped condition is "one which might prevent an employee from handling such jobs as the average non-impaired worker could handle." All definitions in this regard leave something to be desired, our own included.

In industry today there is equal need for the rehabilitation, or education if you will, of the handicapped individual's fellow employees.

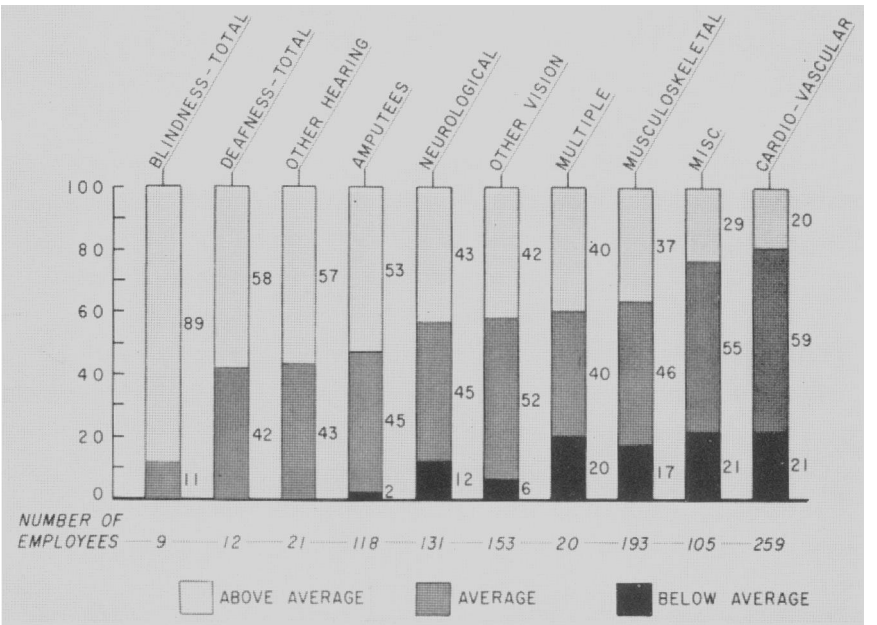

Fig. 1. Attendance record of 1,021 handicapped employees classified by nature of handicap.

The need for education of nonhandicapped employees is exemplified by an epileptic seizure an employee had in an office. Within a few seconds she was out of the seizure and back at work. Of her co-workers who witnessed the seizure, one fainted, one vomited, and one was so nervous as to require sedation and bed rest in the infirmary for the remainder of the day. Such impact on others frequently becomes the crux of the problem.

Rehabilitation begins not with industry, as might be supposed, but with the individual. It is both relative and dynamic. The attitude of the disabled, which is dependent upon many and complex forces both from within (type of disability, constitutional or static assets and the motivation to be productive again), and extrinsic forces such as medical care, attitude of the physician, and the reception of industry, all are vital factors in rehabilitation.

When an individual with a handicap wants to be productive there is little to turn him from his drive. Perhaps just as frequently, a worker

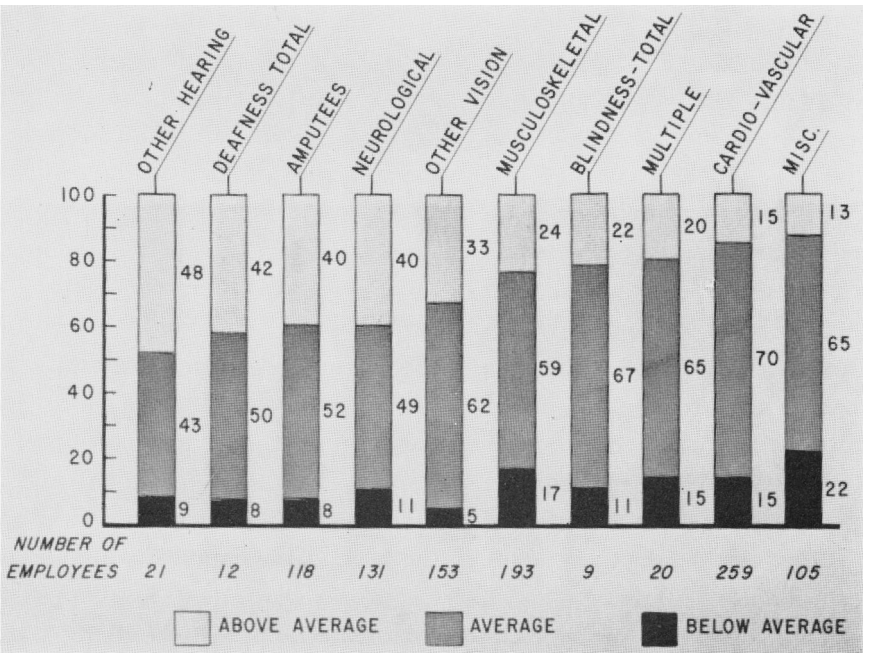

Fig. 2. Job performance record of 1,021 handicapped employees classified by nature of handicap.

with a job may be completely unwilling to continue at work even though the degree of disability may be such that it would not interfere with his work. A case comes to mind of a female employee who, after a successful breast removal for a malignancy, was unable to continue a clerical desk job even though she was not really handicapped. The failures in this case, though complicated, were certainly not of occupational origin.

We have studied 1,021 severely physically handicapped employees who require, one might say, special consideration in rehabilitation. Thirty-four per cent of these individuals were employed as handicapped, and 66 per cent were injured on or off the job during employment. (For purposes of this study, physically handicapped is defined as "a condition which might prevent an employee from handling such jobs as the average nonimpaired worker could handle.") To be effective, to use the employee's abilities without glamorizing his disabilities, employment of the so-called handicapped should be as normal and as

routine as is practical. Any program should function regularly; it should not follow a crash program of employment during the "Hire the Handicapped Employee Week" and then lie dormant the rest of the year. It should be an employment with expected gain for the company, not employment for the sake of publicity or praise, as otherwise the benefit becomes a gift, not a job opportunity, and a psychological loss to the afflicted employee. Those afflicted should be given the opportunity to earn their own livelihoods within their own limitations as useful and needed citizens, not as social mutations.

Our 1,021 exceptional cases have been fused and molded into our employed population. They are a part of our organization and are not treated apart from other employees. The records of these 1,021 employees were studied. Their attendance record and job performance are shown in Figures 1 and 2.

The result in each study reveals a very satisfactory experience, and it is obvious that employment of the physically handicapped presents no problem to industry where there is proper placement, mutual understanding, clear motivation on the part of both employer and employee, and no punitive legal involvement.

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3. Rogg, S. C. New concept of Accidents, *A.M.A. Arch. Environ. Health: 3*:5, Nov. 1961.